

AMENDMENTS TO THE CLAIMS

Please amend the claims as shown below. This listing of claims will replace all prior versions, and listings, of claims in the application. Deletions of text are indicated with ~~striketrough~~. Added text is shown underlined.

Claim 1 (original) A method of producing transformed plant cells, the method comprising:

culturing at least one non-apical meristemic cell to produce one or more organogenic cells; and,

introducing at least one nucleic acid segment into the organogenic cells to produce one or more transformed organogenic cells.

Claims 2-4 (canceled)

Claim 5 (previously presented) The method of claim 1, wherein the non-apical meristemic cell comprises a pineapple cell.

Claims 6-9: (canceled)

Claim 10 (previously presented): The method of claim 1, wherein the nucleic acid segment comprises at least one sense nucleic acid segment that corresponds to at least a portion of at least one endogenous gene;

wherein the nucleic acid segment comprises at least one sense nucleic acid segment that corresponds to at least a portion of at least one exogenous gene;

wherein the nucleic acid segment comprises at least one antisense nucleic acid segment that corresponds to at least a portion of at least one endogenous gene;

wherein the nucleic acid segment encodes at least one polypeptide transcription factor; or,

wherein the nucleic acid segment encodes at least one promoter and/or at least one enhancer, which nucleic acid segment homologously recombines with at least one promoter and/or at least one enhancer of at least one endogenous gene.

Claims 11-16 (canceled)

Claim 17 (original): The method of claim 1, further comprising:
generating at least one plant from the transformed organogenic cells.

Claim 18 (original): The method of claim 1, wherein the nucleic acid segment encodes a polypeptide.

Claims 19 and 20 (canceled)

Claim 21 (original): The method of claim 18, wherein the polypeptide is heterologous to the organogenic cells.

Claim 22 (original): The method of claim 18, wherein the polypeptide is homologous to at least one endogenous polypeptide of the organogenic cells.

Claim 23 (currently amended): The method of claim 18, wherein the polypeptide comprises at least one carotenoid biosynthetic polypeptide that is selected from the group consisting of: an isomerase, an isopentenyl diphosphate isomerase, a geranylgeranyl pyrophosphate synthase, a phytoene synthase, a phytoene desaturase, a ζ -carotene desaturase, a lycopene β -cyclase, a lycopene ϵ -cyclase, a β -carotene hydroxylase, and an ϵ -hydroxylase.

Claims 24 and 25 (canceled)

Claim 26 (original): A method of producing transformed plant cells, the method comprising:

culturing at least one meristemic cell to produce at least one shoot;

culturing at least one explant from the shoot to produce one or more organogenic cells; and,

introducing at least one nucleic acid segment into the organogenic cells to produce one or more transformed organogenic cells.

Claim 27 (original): The method of claim 26, wherein the explant comprises one or more non-apical meristemic cells.

Claims 28-30 (canceled)

Claim 31 (previously presented): The method of claim 26, wherein the non-apical meristemic cell comprises a pineapple cell.

Claims 32-35 (canceled)

Claim 36 (previously presented): The method of claim 26, wherein the nucleic acid segment comprises at least one sense nucleic acid segment that corresponds to at least a portion of at least one endogenous gene;

wherein the nucleic acid segment comprises at least one sense nucleic acid segment that corresponds to at least a portion of at least one exogenous gene;

wherein the nucleic acid segment comprises at least one antisense nucleic acid segment that corresponds to at least a portion of at least one endogenous gene;

wherein the nucleic acid segment encodes at least one polypeptide transcription factor; or,

wherein the nucleic acid segment encodes at least one promoter and/or at least one enhancer, which nucleic acid segment homologously recombines with at least one promoter and/or at least one enhancer of at least one endogenous gene.

Claims 37-42 (canceled)

Claim 43 (original): The method of claim 26 further comprising:
generating at least one plant from the transformed organogenic cells.

Claim 44 (original): The method of claim 26, wherein the meristemic cell is derived from a core and/or a stem of a crown of a pineapple plant or a leaf base of pineapple plant.

Claim 45 (original): The method of claim 44, wherein the meristemic cell is a lateral meristemic cell or a meristem cell induced by tissue culture.

Claim 46 (original): The method of claim 44, wherein the meristemic cell is a crown tip meristemic cell.

Claim 47 (original): The method of claim 26, wherein the nucleic acid segment encodes a polypeptide.

Claims 48 and 49 (canceled)

Claim 50 (original): The method of claim 47, wherein the polypeptide is heterologous to the organogenic cells.

Claim 51 (original): The method of claim 47, wherein the polypeptide is homologous to at least one endogenous polypeptide of the organogenic cells.

Claim 52 (currently amended): The method of claim 47, wherein the polypeptide comprises at least one carotenoid biosynthetic polypeptide that is selected from the group consisting of: an isomerase, an isopentenyl diphosphate isomerase, a geranylgeranyl pyrophosphate synthase, a phytoene synthase, a phytoene desaturase, a ζ -carotene desaturase, a lycopene β -cyclase, a lycopene ϵ -cyclase, a β -carotene hydroxylase, and an ϵ -hydroxylase.

Claims 53 and 54 (canceled)